

ICT121 Introduction to Computer Systems Architecture

Level: 1

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY SEMESTER

Synopsis:

This is an introductory course on the architecture of modern computer systems. It introduces the three major components of a computer system, consisting of the processor, memory and input-output control. It describes the main functions of each component and how they interact with each other. It then explores how software interacts with the computer hardware by introducing machine instructions and assembly language programming using a simplified processor.

Topics:

- Overview of a computer system
- Data Representation
- Computer Arithmetic and Logic
- CPU
- Main Memory
- Input-Output
- Addressing modes and machine instruction programming.

Textbooks:

William Stallings: Computer Organisation and Architecture Designing for Performance (9th ed.- ISBN:9780273769194) 10th edition Pearson
ISBN-13: 9781292096858

Learning Outcome:

- Analyse the various computer data representations using different types of number systems
- Describe the architecture of a microprocessor based computer system
- Summarise the key features of a general purpose computer system
- Describe the characteristics of various types of memory
- Demonstrate the execution of a computer program in the main memory
- List the components of a computer system and describe how they interact with each other
- Explain how the computer software interacts with hardware
- State the role of input and output modules in a computer system
- Use the EASY68K simulator
- Develop simple application programs using assembly language

Assessment Strategies:

Continuous Assessment Component	Weightage (%)
QUIZ	9
TUTOR-MARKED ASSIGNMENT	21
Sub-Total	30

Examinable Component	Weightage (%)
Written Exam	70
Sub-Total	70

Weightage Total **100**